[0011] According to the invention described in claim 5, in the recordable optical disk according to claim 3 or 4, the depth D of the preformatted pit is set to
$D \cong (0.25-d+0.5n) \times \lambda$
wherein the depth of said winding guide groove is d, the wavelength of the laser beam for recording is λ, a predetermined integer is n.
Therefore, since the amplitude of the wobble signal acquired from the winding guide groove approximately agrees with the amplitude of the wobble signal acquired from the preformatted pit, without lowering the quality of a wobble signal, it is possible to pre-format in advance.

[0015] According to the invention described in claim 10, in the recordable optical disk according to claim 8 or 9, when the wavelength of the laser beam for recording is λ, the depth of said winding guide groove is set to 0.03-0.05λ, and the depth of the pit preformatted in the winding pit train is set to 0.09-0.16λ. Therefore, since the amplitude of the wobble signal acquired from the winding guide groove approximately agrees with the amplitude of the wobble signal acquired from the preformatted pit, it is possible to pre-format in advance, without lowering the quality of a wobble signal. It is possible to excellently detect each of an information reproduction signal, wobble signals, tracking signals, focusing signals, etc..

[0022] The second embodiment of this invention is explained based on FIG. 6 to FIG. 8. In the first embodiment, the level of a wobble signal is adjusted so that the level of a wobble signal in the groove G part agrees with that in the pre-format pit P part. However, in this embodiment, after acquiring the desired reproduction signal Rf, the level of a wobble signal is adjusted so that the level of a wobble signal in the groove G part agrees with that in the pre-format pit P part.

[0023] For example, as shown in FIG. 6, when groove depth d=0.05λ, and Rf signal amplitude ratio from the pre-format pit P is preferably set to about 0.7, the depth D of the pre-format pit P becomes about 0.125λ. Although a wobble signal ratio is about 0.59 when the groove depth d=0.05λ as shown in FIG. 7, the wobble signal ratio is about 1 when D=0.125λ. In order to obtain 0.59 in the wobble signal ratio in the pre-format pit P part in which D=0.125λ, what is necessary is just to make the amount of meandering of groove G smaller than usual, as a broken line shown in FIG. 8. If the rate that the pit P in the pre-format section in which the pre-format pit P is formed occupies is made about into 0.5 as shown in FIG. 8, the ratio of the amount of

meandering can be calculated by multiplying 1 by:
(wobble signal ratio of Groove G) / (the wobble signal-ratio in pit P part x the rate that pit P part occupies in the pre-format section + the wobble signal-ratio x the rate of groove G)
wherein the groove G has the groove depth d.
That is, in the above example, the ratio of the amount of meandering compared with usual amount can be calculated as follows:
0.59/(1x0.5+0.59x0.5) =0.74